

AMENDMENTS TO THE SPECIFICATION

Please replace page 25 with the following corrected page 25:

Characterization of Mechanical and Physical Properties

[088] After the fabrication step, various mechanical and physical properties of the instant reaction-bonded ceramic composite materials were measured. Density was determined by the water immersion technique in accordance with ASTM Standard B 311. Flexural strength in four-point bending was determined based on ASTM Procedure No. D790 using a screw-driven Sintech model CITS-2000 universal testing machine under displacement control at a crosshead speed of about 0.51mm/min. Specimens measuring about 50mm in length by about 9.8 mm wide by about 2 to 4 mm in thickness were tested with the loading direction parallel to the 9.8 mm dimension and with inner and outer loading spans of 20 and 40 mm, respectively.

Measurement of CTE

[089] Because the composite materials of the instant invention possess very low CTE's, conventional thermal mechanical analysis (TMA) using a dilatometer is not sufficiently sensitive. Instead, a laser interferometry technique was used, whereby parallel, opposing mirrors are mounted at opposite ends of the test specimen, and a laser beam is split in two, with each beam reflecting off one mirror and then combined to create an interference pattern. As the sample is heated, the changing pattern corresponds to the change in sample length, measured in wavelengths of the laser light.

[090] Results of density, flexural strength and CTE of the instant low expansion carbon fiber composites are provided in Table I. When appropriate, the results are provided as a mean +/- one standard deviation.

Table I . Summary of properties of various carbon fiber composites.

Example	Fiber	Lay up	Matrix	Density (g/cc)	Flexural Strength (MPa)	CTE (-50 to 100°C) ppm/K
II [[5]]	T300	8HS	C, SiC, Si	2.394	64.5	0.96 +/- 0.01
I [[4]]	T300	PW	BN, SiC, Si	1.995	156	0.77 +/- 0.01
III [[6]]	K13710	[0/90/+45/-45]s	SiC/Si	2.278	115	1.06
II [[5]]	EWC-600	8HS	C, SiC, Si	2.568	184	1.75 +/- 0.01
I [[4]]	EWC-600	8HS	BN, SiC, Si	2.49	162.1	-0.46 +/- 0.01

8HS : 8 harness satin weave; PW: plain Weave